Abstract of the Disclosure

A system and a method for increasing the data packet transfer rate in a computer network environment and provide faster service to an Internet service provider's dial-in clients. This invention employs a connection optimization interface (COI) device that intermediates between a client and a server to optimize the data packet transfer rate and is located between a bank of modems and the Internet at an Internet service provider's facility. The COI device contains asymmetric TCP/IP stacks and related software to increase the throughput performance of a network. Data packets, sent by either a client or a server, can be accumulated in a buffer of the COI device until such data packets reach the efficient transmission unit. Alternatively, if a data packet is too large to be transmitted before a timeout occurs, the packet is buffered and segmented into smaller packets to meet the efficient transfer unit. Once a data packet that approximates the size of the efficient transmission unit has been formed, it can be transferred to the client or server. The COI device also maintains historical connection speed information and other transmission data for clients and servers, optimizing the data transfer rates and only transferring the data at a rate at which the receiver can accept the data. Excess data packets are stored in a buffer until they can be forwarded. The COI device can also transform the data packets through compression, encryption and format conversion.